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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,731	02/05/2007	Michael Strasser	011235.57476US	2537

23911 7590 02/20/2009
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EXAMINER	
ZHENG, LOIS L	
ART UNIT	PAPER NUMBER
1793	

MAIL DATE	DELIVERY MODE
02/20/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/574,731	STRASSER ET AL.	
	Examiner	Art Unit	
	LOIS ZHENG	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/6/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Claims 1-8 are canceled in view of applicant's preliminary amendment filed 6 April 2008. New claims 9-16 are added. Therefore, claims 9-16 are currently under examination.

Abstract

2. The substitute abstract in view of applicant's preliminary amendment filed 6 April 2008 is accepted and recorded.

Specification

3. The substitute specification in view of applicant's preliminary amendment filed 6 April 2008 is accepted and recorded.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 9 and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook et al. US 3,824,122 (Cook), and further in view of Grisik US 4,004,047 (Grisik).

Cook teaches a diffusion coating process comprising applying a diffusion coating powder pack to the metal component to be coated, applying a powder masking pack to

an area not to be coated with the diffusion coating, and heat treating coated metal component at 1975-2200°F(col. 1 lines 52-59, col. 2 lines 6-10).

However, Cook does not explicitly teach that the coating material is in the form of a paste.

Grisik also teaches a diffusion coating process wherein the diffusion coating material in the form of a paste can be applied to directly to the metal component surface and let dry or can be applied in a powder mixture pack to the metal component(col. 4 lines 36-55).

Regarding claim 9, it would have been obvious to one of ordinary skill in the art to have substituted the application of a diffusion coating pack in the process of Cook with the technique of applying a coating material in the form of a paste as taught by Grisik with expected success since Grisik teaches that both are functionally equivalent methods for applying a diffusion coating material. The claimed solidification of the paste to form a donor pack is inherently taking place in the process of Cook in view of Grisik.

Regarding claims 11-12 and 16, Cook further teaches that the metal component is turbine motor blade made of nickel base super-alloy and the masking powder pack comprising Ni_3Al(col. 2 lines 26-27, 30-31 and 57-59).

Regarding claims 13-15, Cook further teaches that suitable coating powders are described in US Patent No, 3,257,230, which discloses that the diffusion coating powders further comprises aluminum, chromium and activator such as 1% vaporizable halogen in the forms of ammonium fluoride(col. 6 lines 19-26 and 58-60). Since US

Patent No, 3,257,230 is incorporated into Cook by reference, Cook teaches the claimed amount of ammonium fluoride activator.

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cook in view of Grisik, and further in view of Sievers US 4,352,840(Siever).

The teachings of Cook in view of Grisik are discussed in paragraph 5 above. However, Cook in view of Grisik do not explicitly teach that the metal component is covered with a porous separating layer containing alumina before the application of the coating paste.

Siever teaches a diffusion coating process comprising applying an alumina containing layer prior to application of the diffusion coating material in order to greatly enhance erosion resistance of the metal component(col. 3, Example 1).

Therefore, it would have been obvious to one of ordinary skill in the art to have incorporated the step of applying an alumina coating as taught by Siever prior to the application of the diffusion coating material in the process of Cook in view of Grisik in order to greatly enhance erosion resistance in the metal component as taught by Siever.

In addition, Siever further teaches that the alumina coating is dried. Therefore, the binder material in the alumina coating would have evaporated in the process of Cook in view of Grisik and Siever, leaving behind a porous separating layer as claimed.

7. Claims 9 and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. US 2005/0095358 A1(Park), and further in view of Cook.

Park teaches a diffusion coating process comprising applying a paste of diffusion aluminide coating onto a high pressure turbine blade, solidifying the paste to form a donor material, and heat treating the coated turbine blade to a temperature of about 500-1150°C(paragraphs [0018-0020]). The diffusion aluminide coating of Parker further comprises 2-6% of activator such as ammonium chloride or ammonium fluoride (paragraphs [0019]). Parker further teaches that its coating process is compatible with advanced masking techniques(paragraph [0013]).

However, Park does not explicitly teach that the masking technique utilizes a diffusion-blocking powder pack as claimed.

The teachings of Cook are discussed as set forth in paragraph 5 above.

Regarding claim 9, it would have been obvious to one of ordinary skill in the art to have incorporated the Ni_3Al containing masking powder pack as taught by Cook into the diffusion coating process as taught by Park in order to protect the areas not intended to be diffusion coated from the diffusion coating material.

Regarding claims 11-12, Park in view of Cook teach the claimed Ni_3Al containing diffusion-blocking powder pack.

Regarding claims 13-15, Park in view of Cook teach the use of claimed activator in an amount that substantially overlaps the claimed activator amount of 0.2-5wt%. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed activator amount range from the disclosed range of Park in view of Cook would have been obvious to one skilled in the art since Park in view of Cook teach the same utilities in their disclosed activator amount range.

Regarding claim 16, Park in view of Cook teach the claimed turbine motor.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Cook, and further in view of Sievers.

The teachings of Park in view of Cook are discussed in paragraph 7 above. However, Park in view of Cook do not explicitly teach that the metal component is covered with a porous separating layer containing alumina before the application of the coating paste.

Siever teaches a diffusion coating process comprising applying an alumina containing layer prior to application of the diffusion coating material in order to greatly enhance erosion resistance of the metal component(col. 3, Example 1).

Therefore, it would have been obvious to one of ordinary skill in the art to have incorporated the step of applying an alumina coating as taught by Siever prior to the application of the diffusion coating material in the process of Park in view of Cook in order to greatly enhance erosion resistance in the metal component as taught by Siever.

In addition, Siever further teaches that the alumina coating is dried. Therefore, the binder material in the alumina coating would have evaporated in the process of Park in view of Cook and Siever, leaving behind a porous separating layer as claimed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LOIS ZHENG whose telephone number is (571)272-1248. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art Unit 1793

LLZ